

## CLAIMS

What is claimed is:

1. An isolated polypeptide molecule comprising residues 26 to 546 of SEQ ID NO:2.
2. The isolated polypeptide molecule according to claim 1, wherein the polypeptide molecule comprises residues 26 to 627 of SEQ ID NO:2.
3. The isolated polypeptide molecule according to claim 1, wherein the polypeptide molecule comprises residues 1 to 627 of SEQ ID NO:2.
4. The isolated polypeptide molecule of claim 1, wherein at least nine contiguous amino acid residues of SEQ ID NO:2 are operably linked via a peptide bond or polypeptide linker to a second polypeptide selected from the group consisting of maltose binding protein, an immunoglobulin constant region, and a polyhistidine tag.
5. The isolated polypeptide molecule according to claim 1, wherein the polypeptide comprises a fusion protein wherein polypeptide is conjugated with a compound selected from the group consisting of keyhole limpet hemocyanin, muramyl dipeptide, histidine-tag, beta gal, and palmitic acid.
6. An isolated polynucleotide molecule encoding the polypeptide molecule according to claim 1.
7. An expression vector comprising the following operably linked elements:
  - a) a transcription promoter;
  - b) a DNA segment encoding the polypeptide according to claim 6;
  - and



14. A method of producing an antibody to a polypeptide comprising the following steps:

inoculating an animal with the polypeptide such that the polypeptide elicits an immune response in the animal to produce the antibody; and

isolating the antibody from the animal,

wherein the polypeptide comprises at least fifteen consecutive amino acids of the amino acid sequence as shown in SEQ ID NO:2,

and wherein the antibody produced by the method specifically binds to a polypeptide of SEQ ID NO:2.

15. The antibody produced by the method according to claim 14.

16. A method for inhibiting sperm-oocyte fusion comprising contacting the sperm and oocytes with the polypeptide according to claim 1, or a fragment thereof, whereby the polypeptide or fragment inhibits the sperm and oocyte fusion.

17. A method for inhibiting sperm-oocyte fusion comprising contacting the sperm and oocytes with the antibody according to claim 12, whereby the polypeptide or fragment inhibits the sperm and oocyte fusion.

18. A method for inhibiting sperm-oocyte fusion comprising contacting the sperm and oocytes with the antibody according to claim 14, whereby the polypeptide or fragment inhibits the sperm and oocyte fusion.

19. A method for inducing infertility in a mammal, comprising administering to the mammal an contraceptively effective dose of the polypeptide according to claim 1, or a fragment thereof, wherein the polypeptide induces an immune response in the mammal, thereby inducing infertility in the mammal.

20. A method for inducing infertility in a mammal, comprising administering to the mammal the antibody according to claim 12, wherein the polypeptide induces an immune response in the mammal, thereby inducing infertility in the mammal.

21. A method for inducing infertility in a mammal, comprising administering to the mammal the antibody according to claim 14, wherein the polypeptide induces an immune response in the mammal, thereby inducing infertility in the mammal.

22. A composition comprising a contraceptive dose of the polypeptide according to claim 1, or a fragment thereof, and an acceptable carrier, and/or adjuvant.